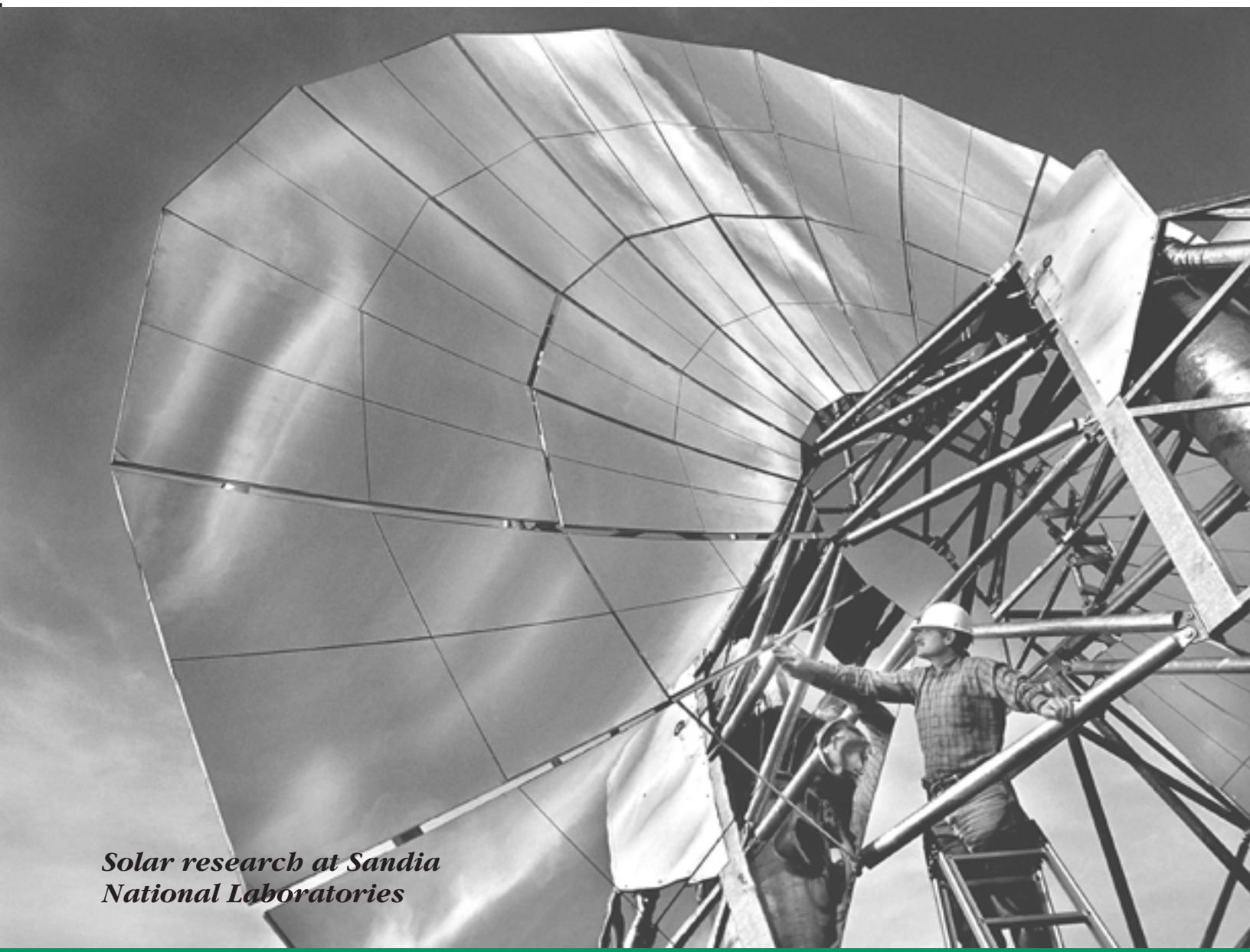
DOE This Month

U.S. DEPARTMENT OF ENERGY

JUNE 2000



Solar research at Sandia National Laboratories

Office reestablished to handle power outages

Department technologies win DISCOVER awards

DOE This Month

U.S. Department of Energy

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Inside

On our cover

Researcher Rich Diver of the Department of Energy's Sandia National Laboratories, Albuquerque, N. Mex., checks out the first prototype of the 10-kW Solar Dish/Stirling Remote Power System, which incorporates the best of advanced solar technology developed at Sandia in recent years. The system consists of 500 square feet of mirror collector panels and an engine that converts solar energy to electricity. The prototype operated for more than 500 hours at Sandia's National Solar Thermal Test Facility, meeting all performance objectives for power, efficiency, and automated operation. Sandia plans to test a version of the solar collector on Indian lands in the Southwest early next year where it will pump water for agricultural purposes.

For more on the solar system, see page 4.

Study shows no imminent risk of nuclear accidents

On May 11, 2000, the results of a nuclear safety assessment of key Department of Energy sites were released. The study, directed by President Clinton after the September 1999 nuclear accident in Japan, concludes there is no imminent risk of a nuclear accident at the Department's nuclear sites.

"Safety is job one at all of our nuclear facilities," said Secretary of Energy Bill Richardson. "I will make sure the Department of Energy takes every step to continually strengthen and improve the ways we ensure the safety of our workers, the public, and the environment."

The study assesses the risk of an unplanned nuclear reaction—or nuclear criticality accident—at the Department's Los Alamos National Laboratory in New Mexico; Rocky Flats Environmental Technology Site in Colorado; Hanford Site in Washington; Savannah River Site in South Carolina; and the Y-12 Plant in Oak Ridge, Tenn. Major positive aspects of the nuclear criticality safety programs at the five sites are noted, including effective liaison between criticality safety staff and workers, continuous training for personnel, and the presence of nuclear criticality safety staff in areas of operation.

The report recommends that Department Headquarters revise DOE orders and guidance to remove inconsistencies with national industry standards and strengthen nuclear criticality safety at sites. It also recommends that all sites assess their safety programs.

In response to the report, Secretary Richardson directed immediate steps to improve and ensure nuclear safety. These include:

- developing corrective action plans that address how each site will improve in all areas noted in the report;
- increasing the retention rate of criticality safety professionals through allowances, cash awards, and higher compensation to make the Department competitive in the labor market;
- finalizing job certification requirements for criticality safety experts;
- hiring more criticality safety experts and ensuring the Federal and contractor criticality staff meet the Department's qualification standards for the position; and
- increasing the number of hours criticality engineers are on the work floor and requiring them to report the hours to the DOE Headquarters safety and health office, as well as the program office responsible for the site.

The sites will be reassessed in January to ensure thorough improvements have been made. The report, "Nuclear Criticality Safety at Key Department of Energy Facilities," is available at **http://tis.eh.doe.gov/criticality/reviews/ncs_report.html**. ❖

Initiative to improve contractor performance

On May 19, 2000, Secretary of Energy Bill Richardson announced a broad initiative to boost contractor performance management at the Department of Energy. The initiative includes provisions to strengthen the Department's ability to sanction poor contractor performance and reward outstanding performance. It also gives the Secretary of Energy the authority to direct the removal of a senior contract manager for poor performance.

"The Energy Department administers over 30 facility management contracts worth over $50 billion that extend over the next decade," said Secretary Richardson. "This department is accountable to the American public for its performance and we must do better than we are today."

The new initiative requires greater responsibility and accountability from both the Department's senior managers and its contractors. Major provisions include:

- conducting annual performance reviews by the Secretary of Energy with the chief executive officers of key contractor organizations;
- paying performance fees in full when earned and withholding fees when performance objectives are not met;
- adding a clause to all facility management contracts permitting the Secretary of Energy to direct a contractor to remove its top manager for failure to perform;
- adding a clause to all facility management contracts to ensure performance bonuses paid by contractors to key managers are dependent on achieving contract performance objectives;
- expanding the Chief Operating Officer "watch list" to include marginal or poor performing contractors;
- requiring contract performance objectives to be linked to the Department's strategic plan;
- holding Federal senior executives accountable for effective contractor management;
- briefing the Secretary of Energy on major projects to review past performance and award fees and to discuss criteria for the next year's award fee determination; and
- informing the Secretary of Energy about contractor performance assessments and proposed performance fees prior to their awarding.

The new procedures build on recent changes in the Department's facilities management contracts which have resulted in increased competition, greater contractor financial responsibility, and increased performance risk. They also build on changes put in place in 1999 by Secretary Richardson to reorganize the Department's program management structure to establish clear lines of accountability and responsibility. ❖

Sandia to test solar system on Indian lands

The Department of Energy's Sandia National Laboratories, Albuquerque, N. Mex., plans to join forces early next year with one or more Native American tribes to test a new solar electricity generating system. The system will be placed on Indian lands in the Southwest where it will pump water for agricultural purposes and be close for observation by Sandia researchers.

A first prototype of the 10-kW Solar Dish/Stirling Remote Power System has operated successfully for more than 500 hours at Sandia's National Solar Thermal Test Facility. The prototype, which consists of 500 square feet of mirror collector panels and an engine that converts solar energy to electricity, met all its performance objectives for power, efficiency, and automated operation.

A second-generation prototype, planned for this fall, will drive a conventional water pump. The first solar pumping system to be erected on a reservation is expected early in 2001. Development of the new remote power system is being funded through the Department's Concentrating Solar Power Program in the Office of Energy Efficiency and Renewable Energy.

The solar power system consists of three parts—the power conversion unit, which features a SOLO 161 Stirling engine; an electric generator; and a solar receiver. Other parts of the system include the solar concentrator, featuring advanced structural mirrors developed at Sandia, and system controls, which provide automated operation, fault detection, data acquisition, and communications. The system can be monitored and controlled over the Internet.

"This new solar system is designed to provide power in remote areas for such applications as pumping water, operating a mill, or providing power to a remote village," says Craig Tyner, manager of Sandia's Solar Thermal Technology Department. "It will be small enough and, at a price of $30,000 to $40,000, affordable enough to be practical."

Tyner expects the major markets for this system will be international. However, it could also be used in hard-to-reach rural areas in the United States, such as Indian reservations.

Sandia representatives are currently talking to several Native American tribes in Arizona and New Mexico about installing demonstration systems on their lands. In the next few months, Tyner anticipates a working relationship will be established with several Native American partners. Sandia will work closely with the tribes to train operators and maintenance personnel and to gain a better understanding of how the system can best serve the people. ❖

Land reserve created at Lawrence Livermore

On April 28, 2000, Secretary of Energy Bill Richardson announced an agreement between the Department of Energy and the U.S. Fish and Wildlife Service to designate 160 acres of the Department's Lawrence Livermore National Laboratory Site 300 Experimental Test Facility as the Amsinckia grandiflora Reserve. A proclamation designating the land reserve and the memorandum of agreement were signed by Secretary Richardson, Wayne White of the Department of the Interior's Fish and Wildlife Service, and Dr. Diana Jacobs of the State of California's Department of Fish and Game.

The agreement preserves a unique ecosystem that provides a home to more than 300 species of plants and 95 species of mammals, birds, reptiles, and amphibians. The reserve is named after the Amsinckia grandiflora, an endangered floral species commonly known as the large-flowered fiddleneck.

"Just as Lawrence Livermore National Laboratory helped write the nation's history in times of tension and conflict, it is today improving the health of our environment and leaving a positive legacy for the future," Secretary Richardson said. "This site is among many that the Energy Department and the country are reclaiming from national defense purposes." Over 178,000 acres of unique wild lands have been preserved by the Department at various sites.

Signing the proclamation and agreement are (seated, l-r) Wayne White, U.S. Fish and Wildlife Service; Secretary of Energy Bill Richardson; and Dr. Diana Jacobs, California Department of Fish and Game.

As outlined in the agreement, the Department of Energy, as the landowner, will limit future use of the area and manage environmental compliance, safety, health, fire protection, access, and cleanup activities. The U.S. Fish and Wildlife Service will manage recovery efforts for the endangered Amsinckia grandiflora resources within the area and provide expertise and technical advice to DOE for the reserve's ecological management. ❖

First DOE small business conference a success

On April 26-27, 2000, the Department of Energy held its First Annual Small Business Conference in Denver, Colo. The conference was sponsored by the Office of Small and Disadvantaged Business Utilization in the Office of Economic Impact and Diversity. "Partnering with Small Business to Fuel Energy Innovations" was the theme.

The conference brought together representatives from the Department's program offices, major contractors, and network of national laboratories and facilities under one roof to educate the small business community about partnership and contracting opportunities. Approximately 500 small businesses were represented at the conference.

Addressing the conference on April 27, Secretary of Energy Bill Richardson told the participants he wants to see more contracts set aside for small business and 8(a) firms, as well as contracting with women and minority owned businesses. The Secretary also said he wants to see more of the technical and scientific task order targeted to small business.

Secretary Richardson made two major announcements at the conference: (1) the permanent establishment of a Department of Energy Mentor-Protégé Program that allows small businesses to grow competitively in energy-related and technical fields; and (2) the availability of over 250 direct contract and subcontract opportunities—with more than half targeted to small business—in the Department's semiannual forecast of contracting opportunities for fiscal years 2000 and 2001 worth approximately $2.4 billion over a three to five year period.

Congressman Mark Udall (right) looks on as Secretary Richardson addresses conference participants.

Secretary Richardson and Congressman Mark Udall presented the Secretarial Small Business Awards to Department organizations for outstanding achievement in meeting small business goals. The award winners:

- Program Office of the Year: Office of Fossil Energy
- Head of Contractor Activity of the Year: Albuquerque Operations Office
- Prime Contractor of the Year: Sandia National Laboratories
- 8(a) Pilot Award: Bechtel Jacobs
- Small Disadvantaged Business Award: West Valley Nuclear Services Co., LLC
- Woman-owned Business Award: Oak Ridge Associated Universities
- Mentor-Protégé Awards: Dyn McDermott (Mentor); Gem Technology (Protégé)

The keynote speaker at a luncheon on April 26 was Aida Alvarez, Administrator, Small Business Administration. Ms. Alvarez spoke about her vision for small businesses, how valuable they are to the economic structure of the workforce, and how important Federal Government outreach is to the small business community.

Reviews from conference attendees have been positive. All expressed a desire to return for next year's conference. ❖

BNFL Hanford contract to be terminated

On May 8, 2000, Secretary of Energy Bill Richardson announced that he will terminate the BNFL, Inc. privatization contract for a high-level waste treatment facility at the Department of Energy's Hanford Reservation in Washington State. Secretary Richardson made the decision after BNFL's proposal was found to raise serious concerns in many areas, including cost and schedule, management, and business approach. Its technical design was found to be sound, but also over-conservative, shifting risk from the contractor back to the U.S. Government.

In August 1998, after a competitive procurement, BNFL said it had high confidence it could design, build, own, operate, and finance a waste vitrification plant for $6.9 billion. On April 24, 2000, BNFL's proposal increased in price to $15.2 billion. "BNFL's proposal was outrageously expensive and inadequate in many ways," Secretary Richardson said.

After meeting with Washington State Governor Gary Locke and Attorney General Christine Gregoire on May 10, 2000, Secretary Richardson announced new commitments to the state to clean up the Hanford waste tanks. "We are committed to cleaning up the Hanford Site as rapidly as possible," Secretary Richardson said.

The Department and the state will immediately amend the existing consent decree and the Department will issue a Request for Proposal for a new design and construction contractor by August 2000. A contract will be awarded by Jan. 15, 2001. During the transition period, the current design team led by Bechtel will continue in order to avoid future delays.

Secretary Richardson also unilaterally agreed to no shipments of waste to Hanford from new sources while the Department works to get the new contract on firm footing. Talks will continue on longer-term commitments on waste shipments into the state. ❖

Portsmouth investigation report issued

On May 25, 2000, the Department of Energy issued its report on a five-month investigation of past and current practices that potentially affected the environment and the safety and health of workers and the public at the Department's Portsmouth Gaseous Diffusion Plant in Ohio. The report concludes that current operations in DOE-controlled areas of the plant do not present an immediate risk to workers or the public, but that there are weaknesses in current operations that need to be addressed.

The report is based on the second of three investigations of the Department's three gaseous diffusion plants ordered by Secretary Richardson. The final investigation report of the Paducah Gaseous Diffusion Plant in Kentucky was issued in February 2000. The investigation of the East Tennessee Technology Park, formerly known as the K-25 site, in Oak Ridge, Tenn., is scheduled to be completed this fall. The investigations are the responsibility of the Department's Office of Oversight in the Office of Environment, Safety and Health.

Weaknesses in current environment, safety and health programs at Portsmouth involve areas such as environmental radiation protection surveillance, worker radiation protection, occupational safety and health, and implementation of the Department's integrated safety management policy. Department program managers responsible for overseeing the Portsmouth plant are required to submit a corrective action plan addressing each of the report's findings within 60 days. Implementation of corrective actions will be monitored by the oversight office.

The review of historical operations at the site indicates that certain work activities and locations posed higher exposure risks to radiological and chemical hazards than others. The most hazardous operations at the plant involved the oxide conversion plant, which had continuous airborne and surface radioactive contamination over its use from 1957 to 1978.

The ongoing medical surveillance of current and former workers at the Portsmouth plant will benefit from information learned by the investigation team. The report also provides important background information to support the Administration's proposal for worker illness compensation legislation.

The two volume report is available on the Internet at **http://tis.eh.doe.gov/oversight/reviews/portsmouth**. ❖

Cleanup method may help oil and gas industry

An on-site soil sampling and testing method developed by the Department of Energy's Argonne National Laboratory may help oil and gas producers save millions of dollars in cleaning up soils contaminated with naturally occurring radioactive materials. The contamination occurs when oil and natural gas production from underground reservoirs carries small quantities of radium to the surface. Over time, the radium can concentrate in pipe scale and sludge deposits, which in turn can contaminate soil and equipment.

The traditional approach to cleaning up such sites involves complicated soil sampling techniques and shipping these samples to offsite laboratories for analysis—a time-consuming and costly process. Argonne's Adaptive Sampling and Analysis Program (ASAP) combines real time data collection techniques with in-the-field decision-making for faster and more precise characterization of a site.

A demonstration of ASAP's capabilities recently was conducted on a three-and-one-half-acre site at Lease Management, Inc., Mt. Pleasant, Mich. Pipes salvaged from nearby oil and gas production sites were stacked there prior to cleaning and reconditioning. Contaminated scale on the outside of the pipes had fallen off during handling and from exposure to the elements. As a result, soils across the pipe yard had varying levels of radium-226 concentrations.

Argonne scientists walked over the Michigan site with a portable global positioning system and a hand-held gamma ray detection device to map surface gross activity levels. A commercial technology called the RadInSoil™ was used to develop a relationship between gross activity values and radium-226 activity concentrations. A tripod-mounted, camera-like device called a High Purity Germanium gamma spectroscopy system directly measured radium-226 concentrations in surface soils.

With the field data, the researchers determined immediately where contaminated soil exceeded regulatory standards and would require excavation for disposal. It took four days to characterize and remediate the Michigan site.

For sites contaminated with naturally occurring radioactive materials, it is estimated that using ASAP costs only 10 percent of what a more traditional approach to characterization would cost. In the Michigan demonstration, use of ASAP is expected to save the site owner about $36,000 in disposal costs.

Plans are underway to host a series of workshops to provide training in ASAP to oil and gas industry members. In the future, the technology could be applied to stewardship of remediated Department of Energy sites. ❖

Researchers win technology transfer awards

On May 10, 2000, the Federal Laboratory Consortium presented William Madia, Director of the Department of Energy's Oak Ridge National Laboratory, and Susan Wood, Director of the Department's Savannah River Technology Center, with its Laboratory Director of the Year Award. Madia was recognized for his tenure as Director of the Department's Pacific Northwest National Laboratory.

Madia and Wood are among four Federal laboratory directors honored for their contributions to promoting technology transfer for economic development and their support of the Consortium and its activities. The other recipients are Jeremiah Creedon, Director of the NASA Langley Research Center, and Donald Koeltzow, Director of the USDA Grain Marketing and Production Research Center.

The Consortium also honored researchers at six Department laboratories and facilities with its Year 2000 Award for Excellence in Technology Transfer. The award recognizes individuals or teams at Federal laboratories who have done outstanding work in transferring technology. The Department's winners and technologies are:

- Arun Wagh and Dileep Singh, Argonne National Laboratory – Ceramicrete, a ceramic that sets harder than concrete and binds quickly to almost anything except plastics.

Federal Laboratory Consortium *Laboratory Director of the Year Award*

William Madia

Susan Wood

- William Chu, Lawrence Berkeley National Laboratory (LBNL) – accelerator-based proton therapy for cancer treatment.
- Ashok Gadgil, LBNL – UV WaterWorks, an energy-efficient, low-cost system to disinfect water.
- Curt Theisen, Lloyd Hackel, Ralph Jacobs, John Wooldridge, and Daryl Grzybicki, Lawrence Livermore National Laboratory (LLNL) – LaserShot Peening System that extends the life of critical metal parts.
- James Sommercorn, Ralph Patterson, Sarita May, and John Wooldridge, LLNL – PEREGRINE, a system that provides more accurate calculations of cancer radiation dosage.
- Desikan Bharathan, Vahab Hassani, Yves Parent, Federica Zangrando, and Edward Hoo, National Renewable Energy Laboratory – advanced direct-contact condensers as applied in geothermal power plants
- David Dixon, Raymond Bair, Thom Dunning, Deborah Gracio, Jeffrey Nichols, Theresa Windus, and Rebecca Wattenburger, Pacific Northwest National Laboratory (PNNL) – Molecular Science Software Suite for chemists to access supercomputers.
- Jeffrey Surma, David Lamar, and Michael Elliott, PNNL – Plasma Enhanced Melter for conversion of waste into useful products.
- Mohammed Khaleel, Gary McVay, Kenneth Johnson, Mark Smith, and Bruce Harrer, PNNL – a superplastic forming process for automotive component manufacturing.
- Brian Looney, John Olschon, and Robert Marchick, Savannah River Technology Center – PHOSter system, which allows the controlled addition of phosphorus into sites contaminated with organic compounds.

The Federal Laboratory Consortium was organized in 1974 and formally chartered by the Federal Technology Transfer Act of 1986 to promote and strengthen technology transfer nationwide. More than 700 major Federal laboratories and centers and their parent Departments and agencies are Consortium members. ❖

Energy emergencies office reestablished

On May 26, 2000, Secretary of Energy Bill Richardson announced the reestablishment of the Office of Energy Emergencies at the Department of Energy. The office will help prepare for and coordinate responses to energy emergencies.

Secretary Richardson made the announcement during an electricity reliability summit in Houston, Texas. "The new office will provide additional resources in our efforts to respond to challenges to the Nation's energy security, such as helping state and local officials and the utility industry prepare for and hopefully prevent power system problems this summer," Secretary Richardson said.

The Office of Energy Emergencies will design response plans for the Department in case of electricity outages this summer and will coordinate activities with critical Federal and state agencies and industry stakeholders. It will include existing Department resources and staff. In the long-term, the office will create response plans for winter emergencies and will coordinate emergency planning efforts Departmentwide. ❖

New features available via Employee Self Service

At left, Deputy Secretary of Energy T.J. Glauthier signs up and takes advantage of several new capabilities for Department of Energy Federal employees recently implemented in the Employee Self Service (ESS) portion of the on-line Corporate Human Resource Information System (CHRIS). The system now allows employees to electronically update their Federal and state tax withholding, voluntary allotments, direct deposit, and business locator information and to view a personalized annual benefits statement.

A popular feature of ESS is the capability for employees to view their biweekly Earnings, Leave, and Benefits statement the Friday before it is received by mail and to access statements for the previous six pay periods. Employees also can view personal and employment information and training histories and courses. By years's end, health benefits and Thrift Savings Plan changes will be able to be updated on-line.

Employee access to ESS is available at **http://chris.inel.gov**. For assistance, contact the ESS Help Desk, 301-903-0605. For additional information, contact Letitia Lawson, 202-586-3807. ❖

Department receives GIDEP achievement award

On May 3, 2000, the Department of Energy received the 1999 GIDEP Achievement Award for Government. The annual award was presented to the Department as the top government activity to exhibit overall excellence in participation and management of the Government-Industry Data Exchange Program (GIDEP).

GIDEP is a cooperative program between government and industry participants seeking to reduce or eliminate costs of systems, facilities, and equipment by sharing information. The program reported that the Department saved over $4 million in fiscal year 1999 because of Federal and contractor employee use of GIDEP data. The largest Federal component savings were reported by Nevada Operations Office; the largest contractor savings, Allied Signal (now Honeywell).

In the photo, at the award ceremony, are (l-r) Captain Bruce Scott, USN, military deputy to the Deputy Administrator for Defense Programs, National Nuclear Security Administration (NNSA); Tom Rotella, DOE GIDEP Representative, NNSA; and Roy Capshaw, Nevada Operations Office GIDEP Representative. ❖

ORAU selected to manage ORISE programs

The Department of Energy's Oak Ridge Operations Office has selected Oak Ridge Associated Universities, Inc. (ORAU), a consortium of 86 colleges and universities, to manage and direct programs of the Oak Ridge Institute for Science and Education (ORISE). ORISE is a multi-program Department facility involved with national and international programs in education, training, health and safety, national security, and environmental assessments.

The cost-plus-award fee, performance-based contract, effective May 1, 2000, is valued at up to $425 million over the life of the contract. There will be a brief transition period followed by a base period of three years, with an additional two-year option.

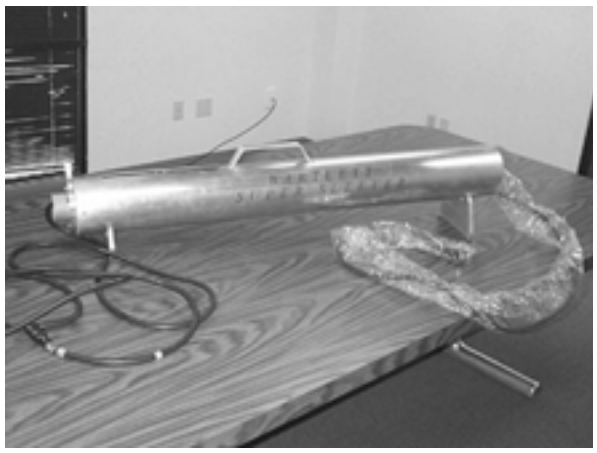
In the photo, Leah Dever, Manager Oak Ridge Operations, congratulates Ronald Townsend, President, ORAU, at the contract signing ceremony. Standing l-r are Greg Mills, Beverly Harness, Judy Stroud, and Regina Chung, Oak Ridge Operations, and Jim Foutch, ORAU General Counsel. ❖

Argonne opens heavy vehicle research test cell

The Heavy-Duty Truck Engine Test Cell recently opened in the Powertrain and Emissions Research Facility at the Department of Energy's Argonne National Laboratory. Argonne engineers are studying the effect of late-cycle injection of air or oxygen-enriched air on reducing particulate emissions in diesel engines. The research is part of a $1.2 million cooperative research and development agreement among the Department's Office of Heavy Vehicle Technologies (OHVT) in the Office of Energy Efficiency and Renewable Energy (EE), Argonne Lab, and Caterpillar Inc.

Reviewing the test cell are (l-r) Jim Sibley, Assistant Director of Research, Caterpillar Inc.; Harvey Drucker, Argonne Associate Laboratory Director for Energy and Environmental Science and Technology; and Jim Eberhardt, OHVT director, Office of Transportation Technologies, EE. ❖

Savannah River develops safety sleeve



The Department of Energy's Savannah River Site is using a new device, invented by a site operator to safely improve his job, that puts a protective plastic sleeve around equipment used in radioactively contaminated areas. The Super Sleever (right) sheaths long, narrow objects—extension cords, water hoses, remote equipment, etc.—in plastic for safe reuse. A sleeving job that routinely requires two operators 45 minutes to perform is reduced to one operator taking less than two minutes. The site expects to save more than $4 million annually.

The portable device, less than four feet long, is a tube inside a tube. The inside tube holds the plastic sleeving. The item to be sleeved is inserted into one side of the tube and pushed through. As the item is pulled out of the other side of the tube, it is sheathed in plastic.

Westinghouse Savannah River Company has applied for a patent for the device. Bartlett Nuclear Inc. in Massachusetts has licensed the device for the commercial marketplace. ❖

PNNL helps train international border officials

A group of 20 Moldovan border enforcement officials recently returned home with more than just American souvenirs after two weeks' training by researchers at the Department of Energy's Pacific Northwest National Laboratory. They learned skills to detect, identify, interdict, and investigate smuggling of weapons of mass destruction. The training was conducted at the Department's HAMMER facility in Richland, Wash.

One day of training focused on two technologies developed by PNNL. The Ultrasonic Pulse Echo instrument (being held, in the photo), can determine the contents of a sealed container or locate hidden compartments. The Material Identification System uses eddy current technology to identify types of metals by comparing the metal in question with an extensive database.

Since 1997, PNNL has trained about 175 border enforcement officials from 12 Eastern European and former Soviet Bloc countries. The two systems are provided to the participating countries for use along their borders. ❖

Employee network ensures quality assurance

If you are a Department of Energy or contractor employee with a quality assurance question or problem, who do you call? Finding someone in the DOE National Telephone Directory Organizational Indexes is difficult as less than one percent of the listed Department Headquarters, field, or laboratory top-level personnel have the word "quality" in their titles.

Two people you can call are Gustave (Bud) Danielson, Jr., Office of Nuclear Safety Policy and Standards, Office of Environment, Safety and Health (EH-31), and Larry Vaughan, Office of Safety, Health and Security, Office of Environmental Management (EM-5). Both Danielson and Vaughan lead active volunteer networks of approximately 100 DOE and contractor quality managers from nearly all Department facilities and divisions.

Danielson is the Department sponsor of the Quality and Safety Management Special Interest Group (QSM SIG) and the Quality Assurance Topical Standards Committee. He also is the author of the DOE Quality Assurance Order 414.1A, the synonymous 10CFR830.120 Quality Assurance Rule, and the implementing guides. Vaughan, the Quality Assurance Advisor for the Office of Environmental Management, is the current Chairperson of the DOE Quality Assurance Working Group (QAWG).

Since 1988, QSM SIG members have assisted in revising and resolving comments on quality assurance orders and various Department guides, provided quality assurance training, and served as a forum for quality assurance discussions. The Topical Standards Committee helps to develop the Department's position on international and national standards.

Since 1996, the QAWG has provided leadership for the Department's quality assurance activities and helped to resolve and coordinate crosscutting issues. For example, the group resolved a wide range of quality product problems and legacy issues regarding the presence of suspect/counterfeit items in Department facilities that could pose a threat to worker safety and public health.

The two groups communicate and support each other's activities. The groups' charters, membership lists, activities, and other information are available on their Internet sites at **http://www.orau.gov/qsm** and **http://twilight.saic.com/qawg**. For additional information, contact Bud Danielson, 301-903-2954, or Larry Vaughan, 202-586-2523. ❖

HPIC reports $11 million cost savings

The Department of Energy Health Physics Instrumentation Committee (HPIC) is a voluntary group of health physics (radiation detection) instrument calibration personnel from 24 Department laboratories; staff from the Office of Worker Protection Programs and Hazards Management, Office of Environment Safety and Health (EH-52); and representatives from other Federal agencies. HPIC was formed in 1992 to standardize health physics instrumentation and calibration efforts across the DOE complex and to share technical information related to health physics instrumentation.

At the HPIC semiannual meeting held May 1-3, 2000, in Las Vegas, Nev., $11 million in documented cost savings were reported from 1994 to 1999 as a result of the committee's activities. The savings were achieved largely from coordinating and sharing test results between laboratories, instituting efficient procurement practices, reducing and controlling unauthorized modifications to instruments by manufacturers, and developing standardized Technical Basis Documents for selected instrument models.

This "success story" demonstrates the benefits that can be realized when a group of dedicated professionals share the common goal of adding value to Department programs while reducing costs. For more information on HPIC activities, contact Murari Sharma, EH-52, 301-903-4359, or Gary La Bruyere, INEEL, 208-526-5081, xag@inel.gov, or visit the committee's Internet site at **http://www.llnl.gov/HPIC**. ❖

DOE, Honeywell partner on Six Sigma

The Department of Energy's Kansas City Plant and Honeywell FM&T are creating a culture of self-improvement by implementing a tool kit of quality management methods, collectively known as Six Sigma, to improve growth and productivity while maintaining and enhancing quality. The Kansas City Plant manufactures electronic, mechanical, and engineering material components for national defense systems.

The Six Sigma program is well known throughout the business world. The processes at a Six Sigma company operate at only 3.4 defects per million opportunities—or 99.9997 percent error-free. Most companies operate at about the Three Sigma level—66,810 defects per million or 93 percent error-free. Employees receive training and participate in projects with milestones to achieve Black Belt status.

Beth Sellers, Manager, DOE Kansas City Area Office, plans to partner with Honeywell FM&T to use Six Sigma methods to improve office performance. "It is very important that DOE participate in the Six Sigma process," says Sellers. "I am very excited about the possibilities for administrative process streamlining." ❖

Department technologies win DISCOVER awards

Five Department of Energy national laboratory researchers are among the 19 winners and finalists of the 2000 DISCOVER Awards for Technological Innovation, presented annually by *Discover* magazine. The winning and finalist technologies were selected by *Discover*'s editorial panel and an outside panel of evaluators from more than 4,000 noteworthy innovations representing eight categories—aerospace, communications, computing, energy, entertainment, health, humanitarian, and transportation.

"The DISCOVER Awards are a measure of the science and technology leadership of the Department of Energy's national laboratories," said Secretary of Energy Bill Richardson. "But more importantly, it is the genius and dedication of these researchers that the 'Academy Awards of Technology' honors."

The Department's winners and finalists are:

- **Gaby Ciccarelli**, Brookhaven National Laboratory; winner, transportation category; for RAPTOR, a quieter, safer, more efficient and environmentally friendly alternative to the conventional jackhammer;
- **Thomas Thundat**, Oak Ridge National Laboratory; winner, humanitarian category; for a small, extremely sensitive, mass-produceable land mine detector;
- **Bassam Jody**, Argonne National Laboratory; finalist, humanitarian category; for an industrial-scale process to recycle hard plastics;
- **Maher Tadros**, Sandia National Laboratories; finalist, humanitarian category; for a foam that decontaminates chemical and biological warfare agents in minutes; and
- **Leo Mara**, Sandia National Laboratories; finalist, transportation category; for the Rapid Road Repair Vehicle, a mobile pothole patcher.

The researchers will be formally acknowledged at a gala ceremony at Walt Disney World's Epcot Center in Orlando, Fla., on June 24. The technologies will be featured in *Discover* magazine's July 2000 awards issue. ❖

NEW Publications

Making Connections: Case Studies of Barriers to Interconnection of Distributed Power (NREL/SR-200-28053), a comprehensive Department of Energy report that documents, for the first time, the marketplace barriers that prevent electric utility customers, developers, and vendors from creating projects that would enable consumers to generate their own electricity. According to the report, distributed power systems that produce electricity onsite can reduce the amount of power utility companies need during peak demand and help prevent power outages. The report outlines an action plan for reducing barriers to distributed generation. Available at **http://www.eren.doe.gov/distributedpower/barriersreport**.

Office of Inspector General reports: ***The U.S. Department of Energy's Global Climate Change Activities*** (DOE/IG-0467); ***Facilities Information Management System*** (DOE/IG-0468); ***Land Conveyance and Transfer at Los Alamos National Laboratory*** (DOE/IG-0469); ***Staff Augmentation Workers at Sandia National Laboratories*** (WR-B-00-04); ***Performance Incentives at the Idaho National Engineering and Environmental Laboratory*** (WR-B-00-05). Available from the U.S. Department of Energy, Office of Inspector General Reports Request Line, 202-586-2744; or at **http://www.ig.doe.gov/**.

FY 1999 Hanford Technology Deployment Accomplishments (RL-D00-002) highlights 23 technologies that were either deployed or demonstrated in fiscal year 1999 at the Department of Energy's Hanford Site. The report summarizes Hanford's technology accomplishments, shares information with other Department sites, and updates stakeholders on technology progress as it pertains to Hanford cleanup activities. Available at **http://www.hanford.gov/techmgmt/99accomplish/index.html**. ❖

In his Washington, D.C. office, Secretary of Energy Bill Richardson, on behalf of the Department of Energy's Northern New Mexico Fire Recovery Fund, accepts a $3,000 donation from representatives of the Japan Nuclear Cycle Development Institute (JNC). The money was raised by JNC employees who have worked with employees of the Department of Energy's Los Alamos National Laboratory since 1988 through the Department's safeguards cooperation program. The JNC employees were saddened by the recent Los Alamos fire, particularly the destruction of the homes of several people they have worked with for years. The fund is authorized to accept gifts from all public and private sources. Donations may be sent to: U.S. Department of Energy; Attn: Northern New Mexico Fire Recovery Fund; Office of Chief Financial Officer, CR-52; P.O. Box 500; Germantown, MD 20874-0500. ❖

Research DIGEST

Researchers at the Department of Energy's **Los Alamos National Laboratory** and Ufa State Aviation Technical University in Russia have developed a process for making strong, lightweight, and corrosion-resistant medical implant material from pure titanium. The process—a combination of Equal Channel Angular Pressing (ECAP) and cold rolling or cold extrusion—nearly triples the strength of pure titanium. The titanium alloy Ti-6Al-4V, currently used for most orthopedic implants, is generally compatible with human tissue. However, the small percentages of vanadium and aluminum metals in the alloy are potentially toxic. Normal wear can lead to deterioration of the implant and the release of alloy elements into the body. Pure titanium is chemically and biologically more compatible with human fluids and tissue, but it is too weak for prostheses that must bear heavy loads, such as leg or hipbone implants. The new process creates medical implants strong enough to bear heavy loads without failure. (Todd Hanson, 505-665-2085)

A team of researchers at the Department of Energy's **Joint Genome Institute** (JGI) in Walnut Creek, Calif., has unraveled the entire genome of a harmful bacterium, dubbed the "superbug," that is a leading cause of hospital-acquired infections. *Enterococcus faecium* is known as the superbug because of its resistance to antibiotic treatments. The project was a collaboration among the JGI, the University of Texas Health Science Center, and Baylor College of Medicine in Houston. The 2.8 million base pairs of DNA that make up the bacterium's genome were sequenced using a single day's production capacity at the JGI's Sequencing Facility. Medical researchers can now work on finding the organism's vulnerabilities and developing vaccines or determining antibiotic treatments to use against the infections. The JGI was established in 1997, merging the genome programs of the Department's **Lawrence Berkeley**, **Lawrence Livermore**, and **Los Alamos National Laboratories**. (Steve Wampler, 925-423-3107)

A consortium of lighting, building, and energy organizations is undertaking a new, four-year program to investigate the potential link between lighting quality and employee performance and well-being. Research from the program, which is managed by the Department of Energy's **Pacific Northwest National Laboratory**, will help quantify the strength of this relationship, then work to translate the results into changes in the workplace. Light Right Consortium members hope to show that productivity increases with more efficient and worker-friendly lighting. Members stress that office lighting is at least as important as an ergonomic chair or keyboard if it affects people both physically and psychologically. Among the Phase One consortium members are the Department of Energy, the Environmental Protection Agency, Alliance to Save Energy, Electric Power Research Institute, Illuminating Engineering Society of North America, and Johnson Controls. Business contact is Ron Nesse, 509-372-4217. (Stacy Maloof, 509-372-6313) ❖

Initiative supports new medical isotope uses

The Department of Energy's Office of Nuclear Energy, Science and Technology (NE) is sponsoring a new initiative to develop innovative uses for radioisotopes in medical research. The Advanced Nuclear Medicine Initiative supports research on the use of isotopes in the diagnosis and treatment of life-threatening diseases and for other promising medical applications, basic medical research, improvements in medical education, and the preparation and use of new kinds of radioisotopes.

The Department is providing $2.5 million in grants in the initiative's first year and hopes to more than double the annual funding in future years. Over 60 applications from more than 40 organizations were received for the first round of grants.

A medical technician prepares a patient for a scanning procedure that will make use of radioisotopes.

These proposals are being independently reviewed. After the review is completed, NE expects to sponsor as many as 10 nuclear medicine research projects at universities, hospitals, and the national laboratories.

Nuclear medicine currently benefits one in three hospital patients in the United States. Each day, around 40,000 medical procedures are carried out using radioisotopes. Annually, over 13 million nuclear medicine procedures are performed in more than 4,000 hospitals and other nuclear medicine facilities in the U.S.

The use of medical isotopes saves money and greatly improves the quality of patient care. For example, when doctors use diagnostic imaging technology, fewer invasive procedures are required and the time that a patient must be hospitalized is reduced. And when isotopes are used to treat certain cancers, patients often can be treated without needing costly hospital stays. ❖

Oak Ridge reaches students in three states

The Department of Energy's Oak Ridge Operations Office recently offered three educational opportunities for elementary school students in Tennessee, Kentucky, and Ohio. "Partnering with schools around our sites to instill an interest in science and the environment is one of the most important and rewarding things we can do," said Leah Dever, Manager, Oak Ridge Operations.

In Oak Ridge, Tenn., the office sponsored an Environmental Symposium in March, with more than 650 eighth-grade students attending classes. The event was cosponsored by Roane State Community College, which has a campus in Oak Ridge.

In April, more than 800 sixth-grade students received hands-on environmental experience at an Earth Day event in Paducah, Kentucky. Students rotated between teaching stations at Ballard County Elementary School's new environmental studies area. The study area received some needed improvements from a donation by Department contractor Bechtel Jacobs Company LLC.

Students attend science class at the Oak Ridge Environmental Symposium

At the Department's Portsmouth, Ohio, site, more than 1,800 sixth-graders took part in the first Science in Education Day in May. DOE and Bechtel Jacobs made arrangements for the students to travel to the new Center of Science and Industry in Columbus free of charge. ❖

Education NOTES

The Department of Energy is sponsoring 36 U.S. graduate students in biology, physics, and chemistry to attend the 50th anniversary meeting of Nobel laureates in Lindau, Germany, June 26-30. The trip is supported by the Department's **Office of Science**. The meeting will bring together about 600 graduate students from Europe, Africa, Asia, and North America to hear lectures and participate in daily small group discussions with 66 Nobel Prize winners in the disciplines of Chemistry, Physics, and Physiology and Medicine. The U.S. students are in their second or third year of graduate work and are currently part of scientific teams doing research with funding from the Department. They were nominated by the head of their academic or research institution. Before leaving for Germany, the students will gather in Washington, D.C., for briefings on the Department's science programs. A list of the students is available at **http://www.doe.gov/news/releases00/maypr/pr00132.htm**.

❖

On May 24, 2000, Secretary of Energy Bill Richardson announced a five-year, $500,000 **initiative to provide minority students with cutting-edge training and hands-on experience** at Department of Energy laboratories and facilities. Secretary Richardson and William H. Gray III, Chairman, United Negro College Fund Special Program Corporation, signed a memorandum of agreement supporting the internship/mentorship program for undergraduate students attending private Historically Black Colleges and Universities. Minority students interested in careers in energy research, engineering, computing, and environmental and life sciences will be partnered with scientists to mentor the students in specifically designed research projects at Department laboratories or facilities. The internships will last one semester and the students will be paid for their work.

❖

The Westinghouse Savannah River Company, lead contractor at the Department of Energy's **Savannah River Site**, was recently recognized by the State of South Carolina, for its help in building a strong state economy by establishing workplace opportunities for students through its Education Outreach Programs. The site established and maintained a pipeline of future workers by providing work-based opportunities to 98 school-to-work students and 122 research interns during the past year. Twenty-two of the research interns were hired into permanent positions at Savannah River Site. ❖

People IN ENERGY

Richard D. Smith, an analytical biochemist at the Department of Energy's Pacific Northwest National Laboratory (PNNL), has been named Battelle Inventor of the Year. Battelle operates PNNL for the Department. Smith is an internationally recognized expert in mass spectrometry and separation techniques. During his career, Smith has been issued 14 patents, received six R&D 100 Awards for technology advancements, and presented one Federal Laboratory Consortium award for technology transfer.

Shelly Havlovick, an industrial hygienist at the Department of Energy's Argonne National Laboratory-West in Idaho, has received the Woman of the Year Award from the Department's Idaho National Engineering and Environmental Laboratory (INEEL). The award honors a woman who works for an organization on the INEEL site and who has made significant contributions in her career field and to the community. At Argonne-West, Havlovick has the lead role in the Beryllium Hazards Program, the Chemical Management System Implementation project, and a number of other projects. Havlovick volunteers her time by assisting the public health service through home evaluations for families having health problems due to their living environment. She also is active in Women in Science and Technology, the Daughters of the American Revolution, the American Cancer Society, and United Way.

Physicist **Michael Creutz** of the Department of Energy's Brookhaven National Laboratory has been awarded the 2000 Aneesur Rahman Prize for Computational Physics by the American Physical Society. Creutz was recognized for "first demonstrating that properties of quantum chromodynamics could be computed numerically on the lattice through Monte Carlo methods, and for numerous contributions to the field thereafter."

President Clinton recently announced his intent to nominate **Dr. Mildred S. Dresselhaus** as Director of the Department of Energy's Office of Science. Dr. Dresselhaus currently is a professor in the Departments of Electrical Engineering and Computer Science and Physics at the Massachusetts Institute of Technology (MIT). She is one of 12 Institute Professors at MIT and previously held the Abby Rockefeller Mauze Chair at MIT in Electrical Engineering and in Physics. The nomination is subject to Senate confirmation.

Johney Boyd Green, Jr., a development engineer in the Engineering Technology Division at the Department of Energy's Oak Ridge National Laboratory, is the recipient of a Black Engineer of the Year Award in the category of Outstanding Alumnus from the National Consortium for Graduate Degrees for Minorities in Engineering and Science. Green's work at the laboratory is in the areas of compression-ignition engines, spark-ignition engines, alternative fuels, and systems applications.

Richard Haire, a senior staff scientist in the Chemical and Analytical Sciences Division at the Department of Energy's Oak Ridge National Laboratory, has been named a fellow of the American Association for the Advancement of Science.

Donald Geesaman has been appointed Director, Physics Division, at the Department of Energy's Argonne National Laboratory. Scientists in the Physics Division study the properties of nuclei and atoms, concentrating on heavy-ion nuclear research and medium-energy and theoretical physics. Previously, Geesaman was the division's chief of medium-energy physics. Geesaman began his career at Argonne in 1976 and was promoted to senior scientist in 1991.

Scientists **Stephen Payne**, Associate Program Leader, Laser Science and Technology, and **Mike Perry**, Associate Program Leader, Short-Pulse Lasers, Applications and Technology, of the Department of Energy's Lawrence Livermore National Laboratory have been elected Fellows of the Optical Society of America.

Darleane Hoffman, professor of chemistry at the University of California-Berkeley and member of the Nuclear Science Division at the Department of Energy's Lawrence Berkeley National Laboratory, is this year's recipient of the Priestley Medal, the highest honor of the American Chemical Society. Hoffman is the second woman to receive the award in the 125-year history of the Society. She is an internationally recognized expert in the study of transuranic elements and this past summer was a member of the team that discovered elements 118 and 116.

Diane Albert, a metallurgist at the Department of Energy's Los Alamos National Laboratory, has received a 2000 Governor's Award for Outstanding New Mexico Women. The award is sponsored by the New Mexico Commission on the Status of Women and the Governor's Office. The Commission annually honors New Mexico women who are leaders in their profession and who are actively involved and have worked to implement positive change in their communities.

Jerry D. Christian, a scientific fellow at the Department of Energy's Idaho National Engineering and Environmental Laboratory and an affiliate professor of chemistry at the University of Idaho has been selected a Distinguished Scientist/Engineer by the Idaho Academy of Science. Christian has 34 years experience in nuclear waste and fuel processing research and development and has done groundbreaking work involving the element ruthenium. ❖

Milestones

YEARS OF SERVICE

June 2000

Headquarters

Chief Financial Officer - Thomas F. Fisher (30 years). **EIA** - Ronald F. Earley (30), Robert G. Harper III (30), Margie L. Craig (25), Sandra R. Smith (25). **Energy Efficiency** - Nellie T. Greer (30), Sarah J. Kirchen (30), Philip M. Hayes (25). **Envir. Management** - Cheryl A. Seymour (25). **FERC** - James Goris (35), Randolph E. Mathura (35), Kenneth M. Anderson (30), Jerry T. Chastain (30), Mark B. Eckell (30), Joseph Hamilton (30), Andrew L. Lyon (30), James S. Taylor (30), Charles P. Cataldo (25), Joseph M. Dees (25), Ralph L. McKinney III (25).

Fossil Energy - Gene H. Kight (30), Ralph Lamonda (30), Raymond J. Braitsch (25), Sun W. Chun (25), Nancy C. Comstock (25), Lawrence Saroff (25). **General Counsel** - John L. Gurney (30), Edward C. Jiran (30). **International Affairs** - Robert R. Copaken (30). **Management & Administration** - Diane W. Gillis (30), Gloria J. Jackson (30), Calvin Lee (30), William G. Pearce (30). **NNSA** - Paul I. Herman (30), Michael E. Long (30), Robert E. Murphy (30), Charles E. Lasley (25).

Nuclear Energy - Dan R. Funk (25). **Policy** - Charlene E. Caulkins (30). **Science** - Carolyn A. Magers (40), Kenneth R. Hohenbrink (30), Susan L. Rose (25), Alan R. Tackett (25). **Security & Emergency Operations** - Nancy H. Holmes (40), John E. Staley (35), Sheila M. Brumage (30), Rickey D. Hall (30), Jean P. Levi (30), Rita M. Metro (30), Mary L. Van Cleave (30), Bruce L. Van Duzer (30), Pamela D. Adams (25), Nancy M. Dowicki (25), Kay E. Sirbaugh (25), April A. Stottler (25).

Field

Albuquerque/NNSA - William D. Bryant (35), Nancy R. Romero (35), Antonio V. Aragon (30), James D. Finley (30), Lillian A. Retallack (30), Karen S. Benson (25), Cecilia L. Chavez (25), Deborah C. Miller (25), Sandra S. Neiderman (25), Earl K. Poe (25), David L. Stimpson (25). **Chicago** - Johnnie D. Greenwood (30), Marta Mims (30). **Golden** - Gailene Reinhold (30), David M. Blanchfield (25), Wilton W. Webb (25). **Idaho** - Herman J. J. Heier (25), Terry H. Reed (25).

National ETL - Richard A. Griffith (25), Joseph P. Parise (25), Michael L. Tiberio (25). **Oak Ridge** - Larry W. Boyd (30), Ronald D. Oglesby (30), John D. Rothrock (30), Commie R. Byrum, Jr. (25), Joseph R. Enright (25), Ronald E. Kirk (25), Judith M. Penry (25), George H. Thoeming (25). **Oakland** - Martin W. Molloy (35), Richard R. Haddock (30), Kim V. Abbott (25), Estela Romo (25). **Oakland/NNSA** - Dorothy J. Short (30), Frances A. Pratt (25).

Pittsburgh Naval Reactors/NNSA - Raymond P. English (25). **Richland** - Steven H. Wisness (25). **Rocky Flats** - Judith A. Krumm (35), Jerry A. Stansberry (25). **Savannah River** - Sandra M. Pike (25), Jacqueline M. Wilkins (25). **Schenectady Naval Reactors/NNSA** - Alfred F. Riccio (30). **Southwestern Power** - Stanley L. Mason (30). **Western Area Power** - Richard L. Gallegos (30), Mark L. Meyer (30), Bonnie J. Nieland (30), Sandra M. Cloud (25), Michael S. Cowan (25), Mary C. Edge (25), Lary A. Martin (25), Donald L. Nord (25), Lyle M. Thurn (25).

Bonneville Power - Edward S. Chittester (35), James B. Cook (35), Donald E. Gorger (35), Eugene McClellan (35), Dennis L. Noble (35), Thomas M. Noguchi (35), Karen J. Davenport (30), Jonathan B. Giard (30), Paul F. Hansen (30), Joe A. Johnson (30), John C. Kreitzer (30), Susan K. Peterson (30), Ronald D. Schachner (30), Allen L. Burns (25), Monique Goulet (25), Carol S. Hustad (25), Marcia E. McElroy (25), Stephen D. Sherer (25), John J. Silagi (25), Marilyn J. Yates (25), Mary E. Zeiher (25), Stephen D. Zimmerman (25).

RETIREMENTS

May 2000

Headquarters

EIA - Byung D. Hong (24 years). **Envir. Management** - Barbara A. Matusik (31). **NNSA** - Zander Hollander (24). **Science** - Frederick W. Wiffen (8). **Security & Emergency Operations** - Roger D. Parish (30).

Field

Idaho - Robert A. Benson (20). **Nevada/NNSA** - Joanne M. Walker (25). **Oakland** - Alfred J. Ahlquist (11). ❖

COMING Events

August

21-23 Energy 2000, Energy Efficiency Workshop and Exposition, Pittsburgh, Pa. Cosponsored by the Department of Energy's Federal Energy Management Program, the Department of Defense, and the General Services Administration. This third annual national conference for government and private-sector energy management professionals offers in-depth presentations, interactive sessions, exhibits by energy suppliers, and the latest information in several areas, including facility operations and energy markets, project financing, "green" building, whole building design, new technologies, managing energy information, and project and program integration. More details and registration information are available at **http://www.energy2000.ee.doe.gov** or from JoAnn Stirling, Florida Solar Energy Center, 800-395-8574 or 321-638-1014. ❖

June 2000

AROUND DOE

Three DOE labs form fusion research "virtual lab"

The Department of Energy's Lawrence Berkeley (LBNL) and Lawrence Livermore National Laboratories and Princeton Plasma Physics Laboratory have signed a memorandum of agreement to create a "virtual lab" to conduct research on heavy ion inertial fusion energy. The agreement will be funded through the Department's Office of Fusion Energy Sciences in the Office of Science.

The three laboratories will join forces in the new Heavy Ion Fusion Virtual National Laboratory. The collaboration will focus on heavy ion driver development and related topics in the common pursuit of inertial fusion energy and more rapid progress in the development of heavy ion drivers through integration of the laboratories' scientific staff, equipment, and experimental facilities.

In heavy ion fusion, high-powered beams of heavy ions ignite pea-sized capsules of deuterium and tritium fuel. The fuel burns so quickly it is confined by its own inertia long enough for the reaction to produce energy. A fusion reaction releases roughly one million times the energy released by the burning of oil without contributing to global climate change.

Roger Bangerter, LBNL, heads the virtual laboratory.

NEPA Lessons Learned Program earns award

The Department of Energy's National Environmental Policy Act (NEPA) Lessons Learned Program has been selected to receive an award for "National Environmental Excellence" from the National Association of Environmental Professionals. The award, in the category of Excellence in Environmental Education, recognizes the program for "its significant contribution to self-examine, share, and measure program effectiveness and continuously improve NEPA."

NEPA requires Federal agencies to consider environmental values and factors in agency planning and decision-making. The Department is committed to compliance with the Act and to sharing information among its many sites. Quarterly reports of DOE NEPA lessons learned are available at **http://tis.eh.doe.gov/nepa/**, click on "NEPA Process Information."

Philippines policy changes endorse renewable energy

Philippines Energy Secretary Mario Tiaoqui recently changed energy regulations to catalyze renewable energy market development in the Philippines. The changes are based on a set of recommendations developed with help from the Department of Energy's National Renewable Energy Laboratory (NREL) through its Philippines Renewable Energy Project. The project is part of the Interagency Technology Cooperation Agreement Pilot Project sponsored by DOE, the Environmental Protection Agency, and the U.S. Agency for International Development to promote clean energy markets in developing countries.

Policy revisions include eliminating requirements for providing backup reserves by operators of renewable resource facilities, removing obstacles to biomass cogeneration facilities, and streamlining approval processes for small hydroelectric facilities.

"Renewable energy in the Philippines is often more cost-effective than extending the electric grid," said NREL senior policy analyst Paul Galen. "The Philippines government is looking at renewable energy to provide the electric service critical to economic growth."

Additional information is available at **http://www.nrel.gov/tcapp/philippines.html**. ❖

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Department of Energy (PA-40)
Washington, DC 20585

Official Business